

geographical traditions (Twidale). This duality has led to a 'composite science' which can, according to Osterkamp and Hupp, at best develop a unified perspective, rather than a unified theoretical approach. Bauer, however, is more optimistic, and can see benefits in both traditions. The *geographical* context for a distinctly applied geomorphology, based jointly upon policy, social concern and sound scientific explanation, is persuasively presented by Graf in the concluding chapter.

Approaching the start of a new millennium, it is perhaps inevitable that reviewers feel compelled to identify disciplinary milestones and benchmark publications. Never-

theless, looking back over more than a century of geomorphological science, this volume will stand out as a worthy candidate for such an accolade. The editors are to be congratulated for a work which should be read by all engaged in research into, and teaching of, the scientific explanation of Earth surface processes and landforms.

NICHOLAS J. CLIFFORD

Department of Geography, University College London

LANDFORM MONITORING, MODELLING AND ANALYSIS edited by S. Lane, K. Richards and J. Chandler. John Wiley, Chichester 1998. No. of pages: 454. Price: £65.00. ISBN 0 471 969 77 X.

This interesting volume is the result of a British Geomorphological Research Group conference held in Cambridge in 1995 as a natural sequel to *Spatial Analysis in Geomorphology*, which was edited for the BGRG in 1972. The present editors have undertaken in their Chapter 1 an excellent analysis of spatial landform research in the intervening quarter of a century. They conclude that the major difference between the contents of the two volumes is 'the physico-mathematical basis of a large proportion of the terrain-based modelling' in the latter. In this respect it is interesting to refer to the only chapter in the present volume which was written by a contributor to the earlier one, namely 'What do terrain statistics really mean?' (Chapter 6) by Evans. The latter, a dedicated morphometric researcher, feels that although the 1972 volume concentrated too much on the study of form for its own sake, current spatial geomorphology has in turn concentrated too much on studies of process, and argues that the core of the discipline should consist of a more balanced interaction between the two.

In their introductory chapter the editors identify particular areas of current research which are highlighted in the present volume. The first are technical developments, which include the electronic tacheometer (Chapter 2), the Global Positioning System (Chapters 2 and 3), Geographical Information Systems (Chapters 7, 8 and 11) and photogrammetry (Chapters 2, 4 and 9). The second are a range of conceptual issues in terrain modelling, which include those concerned with the quality of data representing the terrain surface (Chapters 4, 5, 6, 7, 13 and 14); difficulties of treating larger-scale landforms over longer periods of time (Chapters 11 and 14); the use of topography to provide process information (Chapters 10, 12 and 13); and the estimation of process rates from changes of form associated with hydrological systems (Chapters 10 and 12), glacier mass balance (Chapter 15), snow cover (Chapters 16 and 17)

and coasts and estuaries (Chapters 18 and 19). Chapter 12, where Lamb *et al.* employ TOPMODEL (incidentally I felt that the overall contribution by Kirkby over many years should have been highlighted more in the work as a whole), Chapter 13 by Bates *et al.* on model stability, resolution and sensitivity, and Chapter 14 by Lane on the modelling of a dynamic river channel system, were for me the most interesting core of the book. However, there is something significant here for everyone who is interested in spatial modelling.

If this book tells us anything about developments over the past 25 years it has to do with the nature of research. In 1972, 17 authors were involved in producing 14 chapters (an average of 1.2 authors per chapter), whereas in 1998, 47 contributors produced 19 chapters (2.4 authors per chapter). This clearly points to the growth of scholarly interest in the field, and to the growing importance of collaborative research within an increasingly specialized and fragmented area of scholarship.

Books of this kind inevitably turn out to be 'curate's eggs' to some degree, and the least satisfactory ones may even graduate into 'dogs' dinners'. However, it is pleasant to report that the present work holds together well and maintains the central theme. Problems of the integration of form and process studies and of the natural preoccupation with small scales of space and time remain but, more importantly, are being recognized. The book is a mine of information and represents a significant vantage point from which to view both past and future developments in this rapidly growing field. The fact that the former has been accomplished more satisfactorily than the latter is not surprising, as is recognized by the editors, who wrote: 'it would have required some prescience in 1972 to have predicted the intervening quarter of a century'. To predict the work of the next quarter of a century would give a latter-day Nostradamus quite a headache.

R. J. CHORLEY

*Department of Geography
University of Cambridge*